

What is claimed is:

1. An implant assembly comprising:

a bone plate having at least one opening extending therethrough, and

a bone fastener received within said at least one opening and having a proximal head, a

bone engaging distal portion and a shaft therebetween, wherein at least a portion said fastener or
said bone plate is formed of a polymeric material capable of deforming to fixedly interengage the
fastener to the bone plate.

2. The implant assembly of claim 1 wherein said bone plate includes a thermally
deformable collar substantially encircling said opening.

3. The implant assembly of claim 2 wherein the collar deforms to overlay a portion
of the proximal head.

4. The implant assembly of claim 1 wherein the bone fastener deforms to fixedly
interengage the bone fastener to the bone plate.

5. The implant assembly of claim 1 wherein the bone plate comprises a movable
anti-migration portion to inhibit movement of the fastener.

6. The implant assembly of claim 1 wherein the bone plate comprises a metal
portion and a polymeric portion.

7. The implant assembly of claim 1 wherein at least one of the bone plate and the
fastener are formed of a biodegradable material.

8. The implant assembly of claim 1 wherein said fastener includes a portion formed
of a polymeric material capable of deforming by swelling upon contact with body fluid to fixedly
secure the bone screw to the bone plate.

9. The implant assembly of claim 1 wherein the fastener is formed of a polymeric material comprising homopolymers, co-polymers, and oligomers of polyhydroxy acids, polyesters, polyorthoesters, polyanhydrides, polydioxanone, polydioxanediones, polyesteramides, polyaminoacids, polyamides, polycarbonates, polylactide, polyglycolide, tyrosine-derived polycarbonate, polyanhydride, polyorthoester, polyphosphazene, polyethylene, polyester, polyvinyl alcohol, polyacrylonitrile, polyamide, polytetrafluorethylene, poly-
5 paraphenylene terephthalamide, polyaryletherketones, polyetherketones, cellulose, carbon fiber reinforced composite, and mixtures thereof.

10. The implant assembly of claim 1 wherein at least one of the fastener and the bone plate are formed of a polymer comprising monomeric repeating units derived from d-lactic acid, l-lactic acid, glycolic acid, caprolactone, hydroxy buteric acid, hydroxy valeric acid, and mixtures thereof.

11. The implant assembly of claim 1 wherein the bone plate is flexible to allow articulation of adjacent bone structures.

12. The implant assembly of claim 1 wherein the bone plate connects a first bone portion to an adjacent second bone portion.

13. The implant assembly of claim 1 wherein the opening is an elongate opening.

14. The implant of claim 1 comprising a plurality of openings.

15. An implant assembly comprising:
a bone plate having at least one opening extending therethrough; and
a fastener received within said at least one opening and having a proximal head, a threaded distal portion and a shaft therebetween, wherein at least a portion said fastener is formed of a polymeric material capable of swelling upon contact with body fluid to fixedly
30 secure the fastener to the bone plate.

16. The implant assembly of claim 13 wherein at least one of the fastener and the bone plate is formed of a biodegradable material

17. The implant assembly of claim 15 wherein the bone plate is formed of a
5 polymeric material comprising homopolymers, co-polymers and oligomers of polyhydroxy
acids, polyesters, polyorthoesters, polyanhydrides, polydioxanone, polydioxanediones,
polyesteramides, polyaminoacids, polyamides, polycarbonates, polylactide, polyglycolide,
tyrosine-derived polycarbonate, polyanhydride, polyorthoester, polyphosphazene, polyethylene,
polyester, polyvinyl alcohol, polyacrylonitrile, polyamide, polytetrafluorethylene, poly-
10 paraphenylene terephthalamide, polyaryletherketones, polyetherketones, cellulose, carbon fiber
reinforced composite, and mixtures thereof.

18. The implant assembly of claim 15 wherein the bone plate is flexible to allow
articulation of adjacent bone structures.

19. The implant assembly of claim 15 wherein the bone plate connects a tendon to
bone tissue.

20. The implant assembly of claim 15 wherein the fastener is a bone screw.

21. The implant assembly of claim 15 wherein the bone plate is configured for
attachment to three vertebrae.

22. The implant assembly of claim 15 wherein the opening is an elongate opening.

23. The implant assembly of claim 15 comprising a plurality of openings.

24. An implant assembly comprising:
a bone plate having at least one opening extending therethrough, and
a fastener received within said opening and having a proximal head, a distal bone-
engaging portion, and a shaft therebetween, wherein at least one of the fastener and the bone
plate include an adhesive to fixedly interengage the fastener to the bone plate.

25. The implant assembly of claim 24 wherein at least one of the bone plate and the
fastener includes a pressure sensitive adhesive.

26. The implant assembly of claim 24 wherein the adhesive is selected from the group
consisting of: epoxies, acrylates, cyanoacrylates, polyesters, polyolefins, polyurethanes, silicone
adhesives, and mixtures thereof.

27. The implant assembly of claim 24 wherein the adhesive is a two-part adhesive
and wherein a first part of the adhesive is provided on the bone plate and a second part of the
adhesive is provided on the fastener, whereby contact of the bone plate with the fastener
combines the first part and the second part of the adhesive.

28. The implant assembly of claim 24 wherein the bone plate is flexible to allow
articulation of adjacent bone structures.

29. The implant assembly of claim 24 wherein the bone plate is configured to connect
adjacent vertebrae bodies.

30. A method of fixedly securing a fastener to a bone plate, said method comprising:
surgically preparing bone tissue in need of repair for receipt of a bone plate;
placing a bone plate having at least one opening proximal to said bone tissue in need of
repair; and
inserting a fastener through the at least one opening and into the bone tissue, wherein at
least one of the fastener and the bone plate deforms to fixedly secure the bone screw to the bone
plate.

31. The method of claim 30 wherein the fastener comprises a polymeric portion capable of swelling when in contact with body fluid.

5 32. The method of claim 30 wherein said inserting comprises deforming a portion of the bone plate with application of thermal energy to overlay a portion of the fastener.

33. The method of claim 30 wherein said inserting comprises deforming a portion of the bone plate or the fastener upon application of ultrasonic energy.

10 34. A method of fixedly securing a bone screw to a bone plate, said method comprising:
surgically preparing bone tissue in need of repair for receipt of a bone plate;
placing a bone plate proximal to said bone tissue in need of repair, said bone plate having
15 at least one opening therethrough; and
inserting a bone screw through the at least one opening and into the bone tissue, wherein at least one of the fastener and the bone plate include an adhesive to fixedly secure the fastener to the bone plate.

20 35. The method of claim 34 wherein the adhesive is a pressure-sensitive adhesive.

36. The method of claim 34 wherein the adhesive is selected from the group consisting essentially of: epoxies, acrylates, cyanoacrylates, polyesters, polyolefins, polyurethanes, silicones, and mixtures thereof.

25 37. The method of claim 34 wherein said inserting comprises deforming a portion of the bone plate or the fastener with a solvent.

30 38. The method of claim 34 comprising applying said adhesive to either the fastener or the bone plate.